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By ROBERT H. KANAZAWA

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PARACONGER, A NEW GENUS WITH THREE NEW SPECIES OF EELS (FAMILY CONGRIDAE)

By Robert H. Kanazawa

Echelus caudilimbatus Poey (1867, p. 247) and the related species, *Conger macrops* Günther (1870, p. 40) and *Leptocephalus harringtonensis* Mowbray (1931, p. 1), were omitted from the genus *Conger* Oken as redefined by Kanazawa (1958). Modern workers have allocated these species to the genus *Conger;* however, they possess characters in common that are sufficiently distinctive to warrant the recognition of a new genus. This new genus is here described with an appraisal of the species, three of which are new.

The specimens in the collections of the following institutions form the basis of this study: U.S. National Museum (USNM); Museum of Comparative Zoology, Harvard University (MCZ); Department of Zoology, University of California, Los Angeles (UCLA); Chicago Natural History Museum (CNHM); Bingham Oceanographic Collection, Yale University (BOC); Academy of Natural Sciences of Philadelphia (ANSP); Museu Municipal do Funchal, Madeira (MMF); and Institut Français d'Afrique Noire, Gorée, Senegal (IFAN).

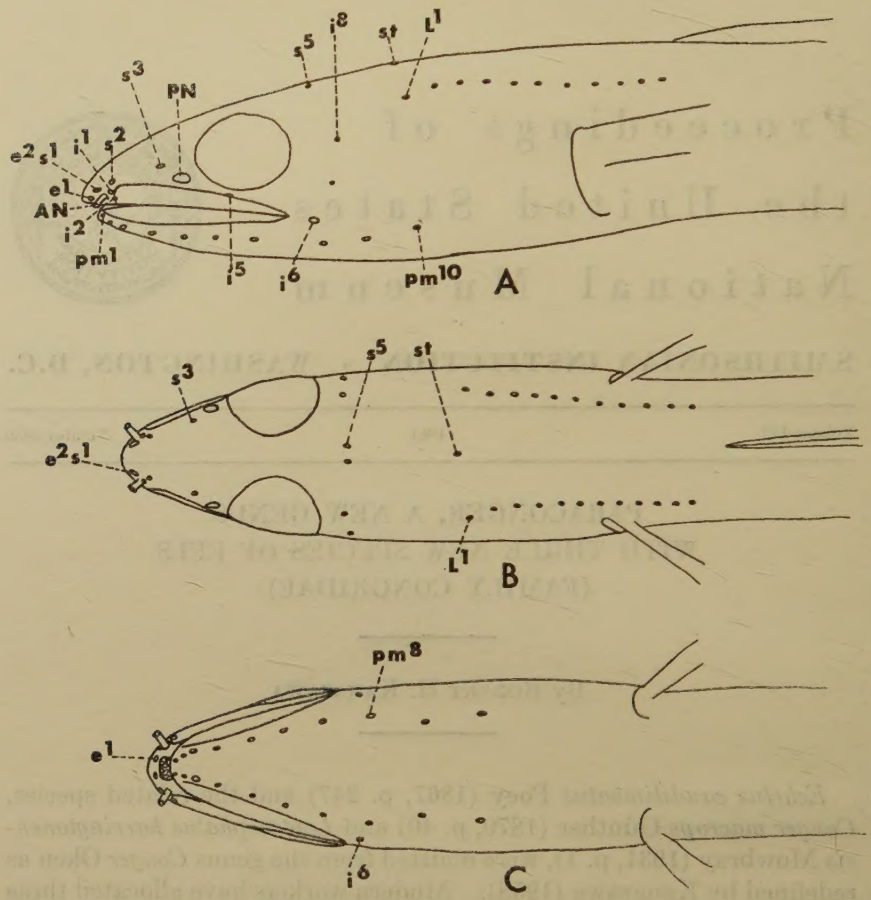


FIGURE 1.—Views of the head of *Paraconger caudilimbatus:* A, lateral; B, dorsal; C, ventral view; show the position of surface sensory pores. Symbols: AN, anterior nostrils; PN, posterior nostril; e^1, first ethmoidal pore; e^2s^1, compound pore, second ethmoidal pore and first supraorbital pore; i^1, first infraorbital pore; pm^1, first preoperculo-mandibular pore; st, supratemporal pore; L^1, first lateral line pore.

I thank the authorities of the above institutions for the loan of specimens and the Smithsonian Institution's photographic laboratory for the photographs used.

METHODS OF COUNTING AND MEASURING (tables 1–2, pp. 5–6): The total length and distance from tip of snout to anus were recorded to the nearest millimeter by extending the specimens on a measuring board. The length of head was measured from tip of snout to upper edge of gill opening; upper edge of gill opening is designated as that point where the free edge joins the body. The distance from origin

FIGURE 2.—Map showing the distribution of the various species of *Paraconger*. Symbols: ● *caudilimbatus*; ☆ *notialis*; ▲ *harringtonensis*; ✪ *guianensis*; ○ *macrops*; ★ *californiensis*; (★=9 specimens).

of dorsal fin to insertion of pectoral fin was measured between a line drawn from the insertion of the left pectoral fin to the insertion of the right fin and a vertical line was drawn from this line to the origin of dorsal fin. The longest pectoral fin was measured. All measurements are expressed in thousandths of total length except the distance from the dorsal origin to pectoral insertion, which is expressed in percent of the length of the pectoral fin. The terminology used in the sensory cephalic pore system as shown in figure 1 was adapted from Allis (1903). The lateral line pores were counted in front of a perpendicular line through anus. The pectoral rays were counted after the skin was dissected from the bases of these rays.

SENSORY PORES AND ORGANS: The sensory pores of the lateral line of the body and the cephalic pore system are useful in differentiating the various species. The distribution of the pores along the lateral line for the various species are given in table 2. The cephalic pore system for the species *caudilimbatus* is shown in figure 1. The species *caudilimbatus* and *macrops* have the greatest development of cephalic pores and *guianensis* has the least. The supratemporal pore is present in *macrops* and *caudilimbatus* but absent in the other species. Ten preoperculo-mandibular pores occur in all the species (7 mandibular and 3 opercular), except *californiensis* which has 11 (8 mandibular and 3 opercular).

PECTORAL FIN RAYS: The number of pectoral rays has differentiated and is useful as a distinguishing character for some species, as is

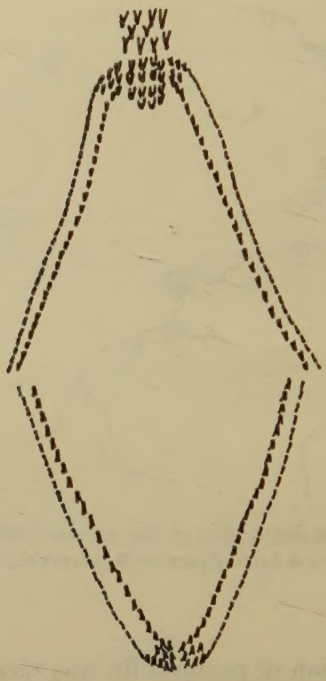


FIGURE 3.—Dental pattern of *Paraconger californiensis*.

shown in table 2. The range of variation for all the species is from 13 to 18 rays.

VERTEBRAE: The difference in the number of vertebrae proves to be of value as a distinguishing character for certain species. The range of variation for the number of vertebrae is from 120 to 148, as is shown in table 2, with *macrops* and *californiensis* on the upper end of this range and *caudilimbatus* and *harringtonensis* on the lower end.

POSITION OF UPPER EDGE OF GILL OPENING: All the species have the upper edge of gill opening at a level with the upper edge of pectoral fin base with almost no variation, except *macrops*, which has the upper edge about a quarter of the width of the pectoral fin base above the upper edge of its base.

Paraconger, new genus

Type species, *Echelus caudilimbatus* Poey.

Paraconger is characterized as follows: Body elongate, shaped as in *Conger;* anus in anterior half of body; snout rounded, length about equal to diameter of eye; mouth large extending posteriorly to below posterior part of eye; anterior nostrils tubular at tip of snout; posterior

TABLE 1.—*Measurements made on species of* Paraconger *for certain characters recorded in thousandths of total length*

Species	Tip of snout to anus								Length of head									
	370 379	380 389	390 399	400 409	410 419	420 429	430 439	440 449	150 154	155 159	160 164	165 169	170 174	175 179	180 184	185 189	190 194	195 199
macrops							3	2	2	—	2							
guianensis			1	—	2	1										1	1	2
notialis				2	6								2	2	3	—	1	
californiensis	2	1	1	3	3	4	1		3	5	4	2	1					
caudilimbatus				1	2	1	3				1	2	3	1				
harringtonensis								1							1			

Species	Length of upper jaw									Diameter of eye							
	475 499	500 524	525 549	550 574	575 599	600 624	625 649	650 674	675 699	225 249	250 274	275 299	300 324	325 349	350 374	375 399	400 424
macrops		1	3	1						1	—	2	1	1			
guianensis						1	—	2	1							3	1
notialis			3	3	—	2						4	2	1	—	1	
californiensis	1	7	2	2	1					4	3	5	1				
caudilimbatus			2	2	1	1	—	—	1				2	3	1	1	
harringtonensis				1											1		

nostrils without tube adjacent to eye, on a level with lower edge of eye to mideye; teeth in jaws in one or two rows, outer row compressed with pointed tips, and in contact basally, forming a cutting edge, teeth in inner row when present conical; vomerine tooth patch short; premaxillary tooth patch squarish with conical teeth; gill opening large, upper edge at a level with upper edge to a quarter of pectoral fin base above pectoral fin base. A pair of large otic bulla present and ethmoidal lateralis ossified. Supratemporal pore 0 or 1, preoperculo-mandibular pore 10 or 11, supraorbital pores 3 or 4, the fourth supraorbital pore absent; the first and second supraorbital pores are combined to form a single pore; the first infraorbital pore is located at the base of the upper part of each anterior nostril, the second pore is in a groove just in front of upper lip, the third and fourth infraorbital pores are absent, the fifth below mid eye and the sixth posterior to vertex of jaw, the seventh and eighth pores when present are postorbital pores, see figure 1; lateral line pores extend posteriorly from upper part of head to midside of body; pores in lateral line anterior to a perpendicular line through anus number from 30 to 53, pectoral rays 13 to 18, vertebrae 120 to 148; origin of dorsal fin above pectoral fin.

Body uniform brownish or dusky, lighter ventrally; vertical fins dusky, lighter at base and at distal edge.

TABLE 2.—*Counts and measurements recorded for the various species of* Paraconger

Species	Lateral line pores												Pectoral fin rays					
	30 31	32 33	34 35	36 37	38 39	40 41	42 43	44 45	46 47	48 49	50 51	52 53	13	14	15	16	17	18
macrops											6	3		1	3	2		
guianensis	2	3	2	1												1	1	3
notialis			5	6	3	1							2	1	3	2		
californiensis					3	4	13	5							3	4	3	1
caudilimbatus				1	3	2	1	3					1	2	1			
harringtonensis							1	1					1	1				

Species	Number of vertebrae														
	120 121	122 123	124 125	126 127	128 129	130 131	132 133	134 135	136 137	138 139	140 141	142 143	144 145	146 147	148 149
macrops													3	1	
guianensis				3	—	1									
notialis							3	2	3						
californiensis										4	2	—	1	—	1
caudilimbatus	1	2	1												
harringtonensis		1													

Species	Distances of origin of dorsal fin behind insertion of pectoral fin recorded in percent of pectoral fin												
	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89
macrops				1	1	—	—	1	1	—	1		
guianensis	2	—	—	—	2								
notialis		1	—	1	2	—	1	2	—	1			
californiensis		5	1	2	1	—	—	2	—	1	1	1	1
caudilimbatus				2	—	1	—	1	1				
harringtonensis		1											

RELATIONSHIPS WITH OTHER GENERA: *Paraconger* has teeth very similar to *Conger*, but differs in other characters. *Conger* has the upper edge of the gill opening at a level near midbase of the pectoral fin, the otic bulla are absent, and the ethmoidal lateralis is not ossified. *Paraconger* is closely related to *Chiloconger* Myers and Wade (1941, p. 65); however, the latter does not have compressed teeth in jaws, and all the teeth are conical and are in two or three rows.

GEOGRAPHICAL DISTRIBUTION: *Paraconger* is found in shallow waters from 7 to 40 fathoms in tropical and subtropical marine waters of the Atlantic and eastern Pacific Oceans as far as is known. Two species are found in the eastern Atlantic and three in the western Atlantic, and one is from the eastern Pacific, as is shown on the map, figure 2, p. 3.

Key to the species of the Genus *Paraconger*

1*a*. Pores in lateral line from anus anteriorly 50 to 53; upper edge of gill opening above pectoral base. Madeira . . . . . **P. macrops** (Günther)

1*b*. Pores in lateral line from anus anteriorly fewer than 47; upper edge of gill opening directly anterior to upper edge of pectoral fin base.

2*a*. Fifth supraorbital pore and postorbital pores absent (see p. 5).

3*a*. Pores in lateral line from anus anteriorly 30 to 36; pectoral rays 16 to 18; vertebrae 127 to 131. Coast of French Guiana.
P. guianensis, new species

3*b*. Pores in lateral line from anus anteriorly 34 to 40; pectoral rays 13 to 16; vertebrae 132 to 137. Senegal to Angola, Africa.
P. notialis, new species

2*b*. Fifth supraorbital pore and postorbital pores present.

4*a*. Pectoral rays 15 to 18; preoperculo-mandibular pores 11; diameter of eye 2.25 to 3.30 percent of total length; vertebrae 138 to 148. Gulf of California, west coast of Mexico, Central America to Peru.
P. californiensis, new species

4*b*. Pectoral rays 13 to 15, preoperculo-mandibular pores 10, diameter of eye 3.10 to 3.90 percent of total length, vertebrae 121 to 124.

5*a*. Supratemporal pore present, dorsal rays 181 to 213, anal rays 140 to 152, dorsal fin low. Gulf of Mexico, West Indies, and Bahamas.
P. caudilimbatus (Poey)

5*b*. Supratemporal pore absent, dorsal rays 241, anal rays 176, dorsal fin high. Bermuda . . . . . **P. harringtonensis** (Mowbray)

Paraconger macrops (Günther)

PLATE 1A

Conger macrops Günther, 1870 (in part), p. 40, type locality Madeira.

SPECIMENS STUDIED: Five specimens ranging in total length from 319 to 420 mm. from the following localities: Madeira, Funchal Market, USNM 177932, MMF 7728, 8634 (from stomach of *Polyprion americanum*); Madeira, Garajan MMF 9127A; Europe, no definite locality, MCZ 2532.

DESCRIPTION: Tip of snout to anus 434 to 441, tip of snout to origin of dorsal fin 161 to 200, length of head 151 to 193, snout length 30 to 34, diameter of eye 24 to 33, depth at head 53 to 62, length of upper jaw (to rictus) 51 to 57, length of pectoral fins 45 to 49. Origin of dorsal fin above and behind pectoral fin base by 46.4 to 75.5 percent.

Dorsal rays 288, anal rays 199 (1 specimen); pores in lateral line from anus anteriorly 50 to 53; infraorbital pores 8; supratemporal

pore 1 or 2; first, second, third, and fifth supraorbital pores present; pectoral rays 14 to 15; vertebrae 145 to 147 (x-ray).

COLOR IN ALCOHOL: Body and head light brown, lighter ventrally, tip of snout and tip of lower jaw dusky; pectoral fins dusky, lighter toward base of fin; a large dusky brown spot covering first 8 rays of dorsal fin and membrane, outer half of dorsal and anal fin dusky brown, basal half and distal edges whitish; lateral line and septum of myomere whitish.

GEOGRAPHICAL RANGE: Madeira.

REMARKS: Günther (1870, p. 40), described *Conger macrops* from specimens from Bahama and Madeira. The Bahama specimen, B.M. 1855.9.19.1270, was examined by Dr. Ernest Lachner, and found to be *Echelus caudilimbatus* Poey. Therefore, I restrict the species *macrops* to the other specimen described by Günther from Madeira. Dr. Denys Tucker (British Museum) made a special effort to examine the Madeira specimen for me in the Liverpool Museum but was unable to find it.

This species has the greatest degree of differentiation from all other species in the genus because of the greater number of lateral line pores, the upper edge of gill opening is constantly higher and the black spot on the anterior side of dorsal fin is present.

***Paraconger guianensis*, new species**

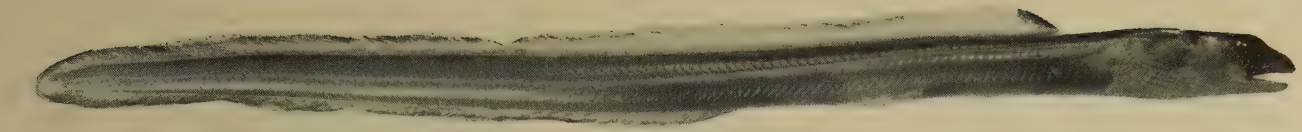
PLATE 2B–C

HOLOTYPE: USNM 158902, 470 mm. in total length, collected off French Guiana, 5°52′ north latitude, 52°3′ west longitude, by a 45 foot Ballerina shrimp trawl, in 40 fathoms by the U.S. Fish and Wildlife motor vessel *Oregon*, November 12, 1957, *Oregon* station 2044.

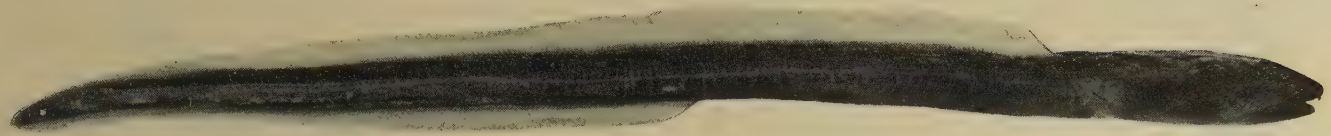
PARATYPES: USNM 158901, three specimens 286 to 418 mm. in total length, collected off French Guiana, 5°39′ north latitude, 51°56′ west longitude by a 40-foot flat trawl, in 37 fathoms, by the motor vessel *Oregon*, November 12, 1957, *Oregon* station 2046.

DESCRIPTION: Tip of snout to origin of dorsal fin 227 (201 to 223, first number for holotype, numbers in parenthesis for paratypes), tip of snout to anus 415 (391 to 424), depth of head 79 (70 to 87), length of head 199 (188 to 198), length of snout 39 (36 to 40), diameter of eye 39 (37 to 43), length of pectoral fin 73 (68 to 81), tip of snout to vertex of jaws 69 (61 to 68).

Pores in lateral line 32 (30 to 36), pectoral rays 16 to 18, supratemporal pore, postorbital pores and fifth supraorbital pore absent. The inner row of teeth in upper jaw extends posteriorly to half the length of outer row. Origin of dorsal fin above pectoral base from

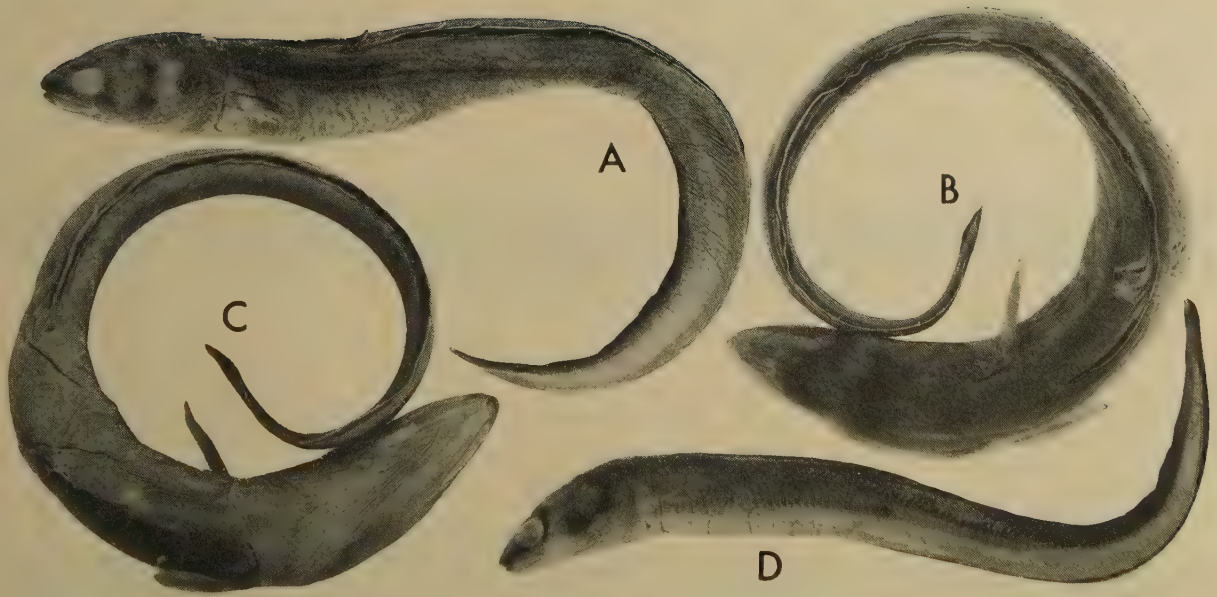


A



B

Paraconger macrops and *P. harringtonensis:* A. *macrops*, USNM 177932, from Funchal market, Madeira, with a total length of 380 mm.; B. the halotype of *harringtonensis*, CNHM 48442, from Bermuda, Harrington Sound, with a total length of 389 mm.



Paraconger californiensis, *P. guianensis* and *P. notialis:* A, the holotype of *californiensis*, USNM 177696, from the Gulf of California, Sinaloa, Mexico, with a total length of 508 mm; B, the holotype of *guianensis*, dorsal view, USNM 158902, from off the coast of French Guiana, with a total length of 470 mm; C, the holotype of *guianensis*, ventralview; D, the paratype of *notialis* USNM 177891, from Cap de Naze, Senegal, with a total length of 477 mm.

25 to 45 percent of pectoral fin posterior to pectoral fin base, vertebrae 127 to 131.

Color in alcohol: Body and head light brown, paler ventrally; a dusky streak above and below eye; outer half of vertical fins dusky, whitish toward basal half and on distal edge; pectoral fins pale, dusky at base and on dorsal edge.

Geographical range: Off the coast of French Guiana in 37 to 40 fathoms of water.

Remarks: This species is related to *notialis* but differs from it in having fewer lateral line pores. It differs from *caudilimbatus* and *harringtonensis*, the other members of the genus found in the western Atlantic in having fewer cephalic and lateral line pores and more pectoral fin rays and vertebrae.

This species shows a greater degree of differentiation from the other species except *macrops* because of the fewer number of sensory pores.

Paraconger notialis, new species

Plate 2d

Conger macrops Cadenat, 1954, p. 566, region de Cayar, Senegal.

?*Conger macrops* Buettikofer, 1890, p. 450, Liberia.—Steindachner, 1894, p. 87, Liberia.—Osorio, 1895, p. 247, Boni Alimento; 1898, p. 199, Cape Verde, Anno Boni.

Holotype: IFAN 839, 539 mm. in total length, collected May 19, 1949, in 35 to 40 meters depth, Côtes, Senegal, by "G. Treca."

Paratypes: Seven specimens ranging in total length from 389 to 575 mm. from the following localities: Senegal, Cap de Naze, Travers, USNM 177891, IFAN 56–896 and 877; southwest of Cap de Naze, IFAN 55–1452; coast of Senegal IFAN 837 and 58–229, all collected by "G. Treca" in depth of 24 to 50 meters; coast of Angola collected by Niiman, during the Baldaque da Silva expedition, MMF 3319.

Description: The numbers recorded first are for the holotype; those in parentheses are for the paratypes. Tip of snout to anus 413 (401 to 420); tip of snout to origin of dorsal fin 206 (196 to 220); length of head 170 (170 to 193); length of snout 31 (30 to 35); diameter of eye 31 (28 to 39); depth of head 78 (68 to 79); tip of snout to vertex of jaw 57 (53 to 60); length of pectoral fin 54 (55 to 61); origin of dorsal fin above 63 percent (31 to 71 percent) behind base of pectoral fin base. Pores in lateral line 34 to 35 (34 to 40); pectoral rays 15 (13 to 16); vertebrae 132 (132 to 137, x-ray).

Color in alcohol: Body and head dusky, lighter ventrally, vertical part of head from lower jaw to upper edge of gill opening pale, tip of lower jaw, dorsal part of head from snout to above eye dusky, around

eye dusky, pectoral fins faintly dusky, outer half of dorsal and anal fins blackish, basal half whitish, and distal edge whitish.

GEOGRAPHICAL RANGE: Coast of Africa from Senegal to Angola, in 24 to 50 meters depth.

REMARKS: This species is related to *guianensis* from off the French Guiana coast but differs from it in having more pores in a lateral line. Name derived from the Latin "notialis," meaning southern.

***Paraconger californiensis*, new species**

FIGURE 3, PLATE 2A

Leptocephalus caudilimbatus Breder, 1928, p. 2, Gulf of California, Conception Bay.

HOLOTYPE: USNM 177696, Mexico, Sinaloa, Gulf of California, 25 miles southeast of Bahia Topolobampo, 22 to 27 fathoms, June 7 to 13, 1956, Wayne Baldwin.

PARATYPES: USNM 177697, 2 specimens, data same as for holotype; UCLA W56–118, 6 specimens, data same as above; UCLA W52–12, 2 specimens, Mexico, Sonora, Gulf of California, just south of entrance to Estero Soldado, January 27, 1952, B. W. Walker and party; USNM 195854, Mexico, Sonora, Gulf of California, about 100 yards southeast of Estero Soldado, January 28, 1952, Walker and party; UCLA W57–116, Mexico, Chiapas, Bahia Chipequa, in 18 fathoms, March 3, 1957, K. F. Mais; BOC 1149, Mexico, Gulf of California, Conception Bay, May 2, 1926, "Pawnee"; UCLA W53–132, Costa Rica, Cocos Island, Chatham Bay, December 27, 1952, D. Krieger; CNHM 50909, Peru, Talaru Harbor, February 15, 1941, Mandel Expedition.

DESCRIPTION: Tip of snout to anus 433 (370 to 430), first number for holotype, numbers in parentheses paratypes; tip of snout to origin of dorsal fin 182 (171 to 200); depth at head 79 (45 to 79); head length (to upper edge of gill opening) 162 (152 to 171); snout 33 (27 to 36); diameter of eye 25 (22 to 33); pectoral length 58 (44 to 60); length of upper jaw (tip of snout to rictus of jaws) 52 (48 to 57); pores in lateral line 39 and 41 (38 to 46); supratemporal pore 0 (0); pectoral rays 17 (15 to 18); preoperculo-mandibular pores 11; postorbital pores 1 or 2; vertebrae 138 to 148.

COLOR IN ALCOHOL: In small specimens tiny dark specks cover the body except the lower half of head and body; dark specks on lower jaw and anterior half of upper jaw; a row of dusky spots along lateral line and along base of anal fin, which continues across abdomen to head; all fins pale. In large specimens body and head dusky, lighter ventrally; vertical fins blackish, paler toward basal half and on distal edge; pectoral fins blackish, pale toward ventral and posterior edge.

GEOGRAPHICAL RANGE: From the Gulf of California southward to Costa Rica and to Talara, Peru, in depth of 18 to 27 fathoms.

REMARKS: *P. californiensis* is the only species with 11 preoperculomandibular pores. This species and *guianensis* have the greatest number of pectoral rays. It and *macrops* have the greatest number of vertebrae. It is related to *harringtonensis* but differs in having more pectoral rays and a shorter length of head.

Paraconger caudilimbatus (Poey)

FIGURE 1

Echelus caudilimbatus Poey, 1867, p. 249, type locality Cuba; 1870, p. 322.
Ophiosoma caudilimbatus Poey, 1868, p. 424, Cuba.
Conger macrops Günther, 1870, in part, p. 40, Bahamas.
Conger caudilimbatus Poey, 1876, p. 152, Cuba.—Ginsburg, 1951, p. 439, Alabama, Dauphin Island; Florida, Pensacola, Key West; Cuba.
Conger caudicula Bean *in* Goode and Bean, 1882, p. 435, Pensacola.—Jordan and Gilbert, 1882, p. 262; 1883, p. 900.
Leptocephalus caudilimbatus Jordan and Davis, 1892, p. 666.—Jordan and Evermann, 1896, p. 355, pl. 57, fig. 149.

SPECIMENS STUDIED: Nine specimens ranging in total length from 77 to 331 mm., from the following localities: Florida, Key West, USNM 131526; Pensacola, USNM 33000, 30709 (type of *Conger caudicula*), 30710 (skeleton); Salerno, USNM 121606; Alabama, Dauphin Island, BOC 3937; Texas, south of Galveston, USNM 158903; Bahama, north of Green Cay, 2 specimens, ANSP, station No. 299.

DESCRIPTION: Tip of snout to origin of dorsal fin 186 to 211, tip of snout to anus 409 to 438, length of head 162 to 176, depth at head 43 to 69, tip of snout to rictus of jaw 53 to 68, length of snout 28 to 42, diameter of eye 31 to 39, pectoral fin length 46 to 63; pores in lateral line 37 to 44, supratemporal pore 1, postorbital 2, preoperculomandibular pores 10; pectoral rays 13 to 15; vertebrae 121 to 124 (in 4 specimens), 48 precaudal and 74 caudal vertebrae; origin of dorsal fin from 44 to 67 percent of pectoral fin length behind pectoral base; posterior nostrils in front of eye on level of lower edge of pupil, rictus of jaw below posterior edge of pupil of eye; dorsal rays 181 to 213, anal rays 140 to 152.

COLOR IN ALCOHOL: Head and body dusky, lighter ventrally; tip of lower jaw dusky; vertical fins dusky, lighter at base and at distal edge.

GEOGRAPHICAL RANGE: Florida, Salerno, Key West, Pensacola, coast of Alabama to Galveston, Texas, from Bahamas to Cuba in 13 to 38 fathoms.

REMARKS: This species is closely related to *harringtonensis*, but differs from it in the presence of a supratemporal pore, in the shorter vertical fins, and in having fewer dorsal and anal rays.

Dr. E. A. Lachner has examined the cotype of *Conger macrops* Günther, British Museum No. 1855.9.19.1270, from the Bahamas,

and his counts and measurements show that it is *caudilimbatus*. For further discussion, see the remarks under *macrops*, p. 8.

Paraconger harringtonensis (Mowbray)

PLATE 1B

Leptocephalus harringtonensis Mowbray, 1931, p. 1, type locality Bermuda.
Conger harringtonensis Beebe and Tee-Van, 1933, p. 46, fig.

SPECIMEN EXAMINED: Holotype, CNHM 48442, Bermuda, Harrington Sound, at night in 7 fathoms, July 20, 1929, L. S. Mowbray, 389 mm. in total length.

DESCRIPTION: Length of head 180, depth of head 489, tip of snout to origin of dorsal fin 194, tip of snout to anus 443, tip of snout to rictus of jaw 57, length of snout 36, diameter of eye 36, pectoral fin length 50. Dorsal fin rays 241, anal rays 176, origin of anal fin below 76th dorsal ray, pectoral rays 13 and 14, pores in lateral line from a perpendicular to anus anteriorly 44 and 43, vertebrae 123 (x-ray). Supratemporal pore absent; postorbital pores 2; first, second, third, and fifth supraorbital pores present; infraorbital pores 7; ethmoidal pores 2; preoperculo-mandibular pores 10.

COLOR IN LIFE: According to Mowbray's description (1931, p. 1), the specimen is silvery grey above, pale below; the belly is so transparent that the viscera can be seen through the abdominal wall; the peritoneum is silvery white; the vertical fins are pale, transparent, making every ray visible. He further states that the specimen is conspicuous for the lack of pigment; when living in a bucket it was almost invisible except for its large eyes, which were strikingly conspicuous.

COLOR IN ALCOHOL: Head and body brownish; vertical and paired fins pale.

GEOGRAPHICAL RANGE: Bermuda, only known from the type.

REMARKS: This species is closely related to *caudilimbatus* but differs in lacking the supratemporal pore, in the vertical fins appearing longer, and in having more dorsal and anal rays.

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